

**STORING AND RETRIEVING OF FIELD DESCRIPTORS IN JAVA
COMPUTING ENVIRONMENTS**

ABSTRACT OF THE DISCLOSURE

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Improved techniques for storing and retrieving field descriptors in Java computing environments are disclosed. The techniques can be used to implement garbage collection for Java programs in a manner that is more efficient, especially for systems with limited resources (e.g., embedded systems). A reference identifier suitable for use by a Java virtual machine is disclosed. The reference identifier is associated with a Java object and can be stored in the internal class representation associated with the Java object at load time. Moreover, the reference identifier can be used at runtime to quickly determine whether a field of the associated Java object is a reference to another Java object. As a result, the amount of processing conventionally performed at runtime is reduced. This, in turn, can improve the runtime performance of Java virtual machines, especially those operating with limited resources (e.g., embedded systems).

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